MATERNAL NUTRITION

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Evidence points increasingly to prenatal nutrition as the "point of attack" for reducing the hazards of parturition and improving the nutritional status of the newborn infant, and to breast feeding, where possible, to reduce infant morbidity and mortality during the first month of life.

Although total infant mortality in the United States has decreased 85 per cent in the past 45 years, mortality among infants at birth and during the first 30 days postpartum has decreased less than 2 per cent, despite advances in prenatal medical care, improvements in obstetrical techniques, and application of vastly improved procedures and facilities for the postnatal care of mothers and newborn infants.

The same period of accelerated achievement in medicine has been the era of the development of the science of nutrition, the transmutation of the proper kinds and amounts of food into development, growth, and activity. The concept of former years, that the fetus is capable of obtaining all its requirements from the mother's body even though it is necessary to deplete her tissues, has been modified by recent evidence. Since some essential nutriments are not stored in significant amounts in the human body, both mother and fetus must obtain them from the mother's diet. Even with substances which are stored in the maternal body in adequate amounts for the mother, it is questionable whether the fetus is adequately nourished unless the diet supplies essentials in quantities ample for the demands of both bodies.

Although the effects of the mothers' dietary deficiencies upon their infants cannot be studied directly, there is evidence to indicate that the nutrition of the mother is an important factor in medical problems arising during pregnancy and parturition, and in delivery of a normal infant with maximum prospect for survival.

Pregnancy, in effect, is equivalent to illness and requires medical supervision and care. Also as in illness, nutrition is not dependent alone upon supplying proper food, for complicating conditions may prevent maternal utilization of the nutriments supplied. In addition, the embryo is subject to a number of abnormal conditions which may interfere with fetal nutrition.

During the reproductive cycle unusual conditions may require an intake of some nutriment in larger quantities than indicated by the Recommended Dietary Allowances (National Research Council Reprint and Circular Series 122, 1945), but for normal women, requirements are not more than the Allowances. All of the recommendations can be met with a good diet of natural foods. Properly applied, the Allowances can serve as a guide in determining the adequacy of the previous dietary and as the basis for prescribing a diet which will meet the body needs during lactation as well as pregnancy.

All evidence demonstrates that the breast-fed baby has the best chance to live, to be nutritionally stable and happy, with greater resistance to disease.

Frequently, infants who were "poor risks" while receiving the best of medical care and the best possible formulas have made immediate gains in weight and other health criteria when human milk is made available. When the supply of milk is temporarily exhausted the babies' responses are immediate, weight-gain declining or ceasing altogether. With breast milk resumed, gains are re-established.

Doctor Macy

The development of new methods of analysis forecasts discovery of hitherto unknown constituents of human milk, or significant facts about the relationship among the nutriments in the food designed for infants by Nature.

The composition of colostrum is quite different from that of mature milk, gradually attaining that of mature milk by 20 to 30 days postpartum. Colostrum has been shown to be important for the newborn baby. Whether human milk is of equal importance after the first month cannot be ascertained, as yet, but it is significant that infant mortality after the first month has been greatly reduced in spite of the decline in breast feeding, whereas the rate for the first month of life has been reduced only slightly.

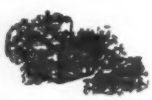
Glances AT NUTRITION RESEARCH

Current scientific literature reveals increasing interest in the role of the gastro-intestinal tract in the maintenance of normal nutrition. Attention is being given to the function of intestinal bacteria, the effect of medication on such bacteria, and the problem of food bulk in the feeding of children. The following abstracts illustrate the trend.

Between-meal Milk—Feeding 21 ounces of milk between meals, in addition to 42 ounces at mealtime, had no adverse effect on the nutrient intake of children aged 5 to 12 years. Even though milk was fed one hour before each meal, no impairment of appetite or intestinal function was observed.

When homogenized and unhomogenized milk were compared, the response to these two types of milk was found to be similar. The author pointed out the wisdom of making available extra servings of milk "whenever there is need for improving a child's nutritional status or food intake."

—J. Ped. 28:703 (June) 1946.



Intestinal Flora and Nutrition — Destruction, alteration, or reduction of normal intestinal flora may lead to vitamin deficiencies. Such effects may be due to the absence of bacteria which prevent vitamin destruction or to the reduction of those which contribute to the vitamin supply via intestinal synthesis.

Inadequate diet, drugs (such as the sulfa group, arsenic, and mercury) and infections are factors which adversely affect beneficial intestinal bacteria. It is suggested that, when these factors are operative the diet should be supplemented with certain vitamins and amino acids to offset increased dietary requirements. The need for a revision of current interpretations of "normal requirements" and for consideration of the effects of alterations in intestinal flora is pointed out.

—Nut. Absts. & Rev. 15:699 (April) 1946.

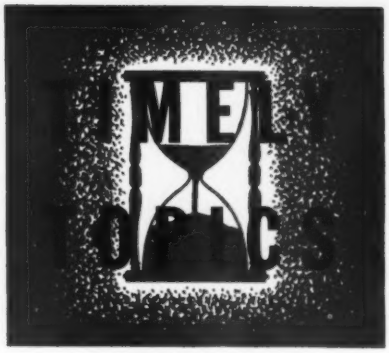
Response of Stomach to Milk—A comparison was made between plain milk and homogenized milk in feeding tests on 59 children. No differences in the gastric response of these children to the two types of milk was noted. It was pointed out, however, that the intestinal tract rather than the stomach is the "major organ of chemical breakdown of milk."

Coagulation time, following an eight-ounce test dose of the milk, ranged from 8 to 52 minutes, averaging 19.7. Stomach emptying time varied from 50 to 170 minutes, averaging 118.5. Wide variations on repeated testing were noted in most of the subjects. Only minimal proteolysis of milk took place in the stomach.

—Am. J. Dis. Child. 71:394 (April) 1946.

Food Bulk and Appetite—Of 360 consecutive patients (1-3 years of age) attending a well-baby clinic, 82 had poor appetites. Lack of organic cause prompted an investigation of the possibility that "forced feeding," was the causative factor. The mothers of the "poor appetite" babies were advised to reduce the quantities of foods (offering primarily those preferred by the child), to refrain from coaxing and undue comment, and to feed nothing between meals. Of the 65 children returning for reexamination, 91 per cent were found to have improved to the extent that they no longer needed to be classified as feeding problems.

—J. Ped. 28:595 (May) 1946.



As Director of the Research Laboratory for the Children's Fund of Michigan since 1930, Dr. Icie G. Macy has directed her efforts to the study of nutritional problems of pregnancy, lactation, infancy and childhood. Her influence in the nutrition field is felt through her numerous publications and through her service on a multitude of committees, national and international in character. She is the recipient of many scientific awards and honors.

Schools throughout the nation will benefit from the National School Lunch Act, H. R. 3370, passed by Congress in May, 1946. The law authorizes Congress to appropriate funds to assist states in the establishment of a permanent, non-profit school lunch program, and allows a maximum of ten million dollars annually to purchase equipment for handling food in schools. Children unable to afford lunches will be provided for. State and federal funds will be matched dollar for dollar through 1950.

Dr. Ruth Blair of the University of Colorado is the 1946 winner of the Borden Award in home economics. The award is made for research which indicated a definite improvement in the health of children when put on a diet made adequate with supplements of eggs, whole-grain or enriched cereal, pineapple juice, and dairy products—milk, butter, cheese and ice cream. The National Dairy Council was one of the sponsors of the study.

SCHOOL LUNCH COOKS IN THE HEALTH EDUCATION PROGRAM

By Edna Martin, Director of Home Economics, Seattle Public Schools, Seattle, Washington

A planning committee, consisting of school administrators, dietitians, and home economists, in the state of Washington, are launching their third training program for school lunch cooks.

The first institute, a two-day program in 1944, was held at the University of Washington and was sponsored by that institution, the State Department of Public Instruction and the State Home Economics Association. The Seattle Schools, the Department of Public Health, the Farm Security Administration and the Extension Service cooperated. Similar institutes followed closely at Washington State College, at Central and Western Washington Colleges of Education, and at Longview.

The enthusiastic recommendations of the "students" led to two institutes of the workshop type in 1945, one at the University of Washington and the other at the State College. At the instigation of the cooks themselves, the institutes are being continued in 1946—this time for a period of one day and on a county basis so that more cooks can attend.

The immediate purpose of the training school for lunchroom cooks is to inspire them with the idea that they have a part in the health education program of schools, and that the school lunchroom is essentially an experimental laboratory for classroom education.

The institute programs have been varied slightly each year in an effort to meet the needs as expressed by those attending the institutes the previous year. An accepted general pattern of procedure largely based on the first year's experience, is outlined here briefly to assist readers who may wish to inaugurate such an institute.

The planning committee outlined a program for the institute. The State Superintendent of Public Instruction wrote to school administrators urging them to send representatives and assuring them that the cost of attendance was a legitimate expenditure from district school budgets. A registration form, to be returned by mail, was enclosed. (A registration fee of $1.00 covered the cost of housing and two meals for the first institute.)

PROGRAM

Scope. A palatable, nutritionallly adequate lunch at a reasonable price, the efficient management of funds and time and the application of good sanitary standards were the objectives of the committee in planning the program. The opportunities for nutrition education in the lunchroom, the cooperation of teaching staff and lunchroom personnel, and community responsibility toward the school were emphasized.

Features. Institute programs combine lectures, food demonstrations, and panel and group discussions. Following are major features of a typical program for a two-day session:

The Educational Possibilities of the School Lunch by the State Superintendent of Public Instruction.

The Development of the School Lunch Program Through the Cooperation of Parent-Teacher Associations and School Administrators, by the President of the State Congress of Parents and Teachers.

Methods of Dishwashing and the Proper Care of Food to Prevent Contamination, by the Senior Sanitarian, State Department of Public Health.

School and Community Cooperation, by a Professor of Education.

Demonstrations of menu planning, purchasing and money management, the best use of food and the quick preparation of plate lunches, by home economists.

A panel discussion, participated in by a principal, three teachers, a public health nurse, and a nutritionist covered such topics as student help, plate lunch versus cafeteria, sanitary standards and the part the lunchroom plays in the health, social and civic development of the school child.

Other talks by qualified persons on such topics as: Ways to Modernize a Lunchroom; Ideas for Making a Lunchroom Attractive; How a Local Lunchroom Uses Student Help.

Exhibits of equipment for lunchrooms and displays of good and poor lunches, added to the value of the program.

The first two-year's experience indicated that all cooks must be reached, not just the interested ones. To make this practical, the meetings need to be in local areas, generally in counties. A one-day "sample" county institute which was held early this fall is being used as a pattern for meetings throughout the state. The programs are similar to the one outlined above. In addition, sections for different sized lunchrooms are organized to consider their problems. This year emphasis is being placed on kitchen planning, and professional instruction is centered on the plate lunch.

The planning committee for the cooks training program now includes all major community agencies. Tentative plans call for a state committee to act in an advisory capacity for a continued training program for school lunch cooks.

HIGH SCHOOL STUDENTS STIMULATE COMMUNITY NUTRITION PROJECT

By Ethelyn Robinson, Head, Home Economics Department
Shorewood High School, Milwaukee, Wisconsin

It began as an attempt to encourage our high school girls to eat better breakfasts. But before we were finished, many in the community — from first graders to mothers and fathers —became interested in our nutrition program.

The idea for the project came from day-after-day observations of students in the late morning periods. Eyelids would sometimes droop and there were occasional yawns in the food study classroom. Suspecting the trouble, I surveyed these classes; inquired concerning their breakfast habits. The result was what I had suspected. The students who showed fatigue did not take time or feel the importance of food in the morning. So, after discussion, the girls and I decided that this was a problem we might work on together.

It was not a question of lack of food in the homes—we knew it was provided in abundance. But still many were coming to school without breakfast or with an inadequate one. So we began to spend our class periods preparing and serving breakfast dishes attractively, and studying their nutritive value.

Students accepted the new plan enthusiastically — breakfast now made good sense to them. But how about the brothers, sisters, and even fathers, who might be neglecting the first meal of the day?

A project which would reach the families of the community seemed to be the best solution. And so our two-fold program began. One branch of

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—that some day you may be asking for apple ice cream? The newly developed apple flavoring also may be used in puddings and custards.

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—that box cars have taken wings? Now food can be carried across the country in tow planes. And they travel from coast to coast in nine hours.

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—that strawberries have been shown to be one of the richest sources of vitamin C, more concentrated even than oranges and tomatoes?

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—that grandmother's wooden churn is just a museum relic these days? New all-metal churns have butter capacities up to one ton.

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—that an even newer prospect is butter made by a continuous process which requires no churn at all?

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—that a new home canning aid, when pressed down on a jar lid, will flash a green signal if the jar is well sealed —a red signal if the vacuum sealing is unsafe?

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—that in New England a fleet of mobile snack bars dispenses sandwiches, cake, pie, milk, and coffee from specially-outfitted trucks to motorists and pedestrians?

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—that, although cheese has been used as food for centuries, it was not prepared commercially until about one hundred years ago?

THINGS YOU'LL LIKE TO READ

NUTRITIVE VALUE OF THE PER CAPITA FOOD SUPPLY, 1909-1945—U. S. Department of Agriculture. Washington, D. C.

How Americans have been fed, through peace and war, depression and booms, is shown in this analysis of the United States' food supply for the past thirty-seven years. Figures and tables present a graphic picture of how American diets have been changing.

THE EFFECT OF COCOA ON THE UTILIZATION OF DIETARY CALCIUM—H. H. Mitchell and Janice M. Smith. J. Am. Med. Assn. 129:871. November 24, 1945.

The authors of this paper conducted a study on animals and on human beings to determine the influence of cocoa on the availability of milk calcium. A reprint of the original article may be obtained from the National Dairy Council, Chicago 6.

SUGGESTED SCHOOL HEALTH POLICIES—Health Education Council, Number 10 Downing Street, New York 14, N. Y. 25 cents. 1946.

A down-to-earth discussion of public school health policies, this pamphlet specializes in workable suggestions for improving your school's health program. Among the topics discussed are general health policies, healthy living while at school, health and safety instruction, emergencies and diseases, health aspects of physical education, treatment of the handicapped, and qualifications of school health personnel.

DOES MILK BETWEEN MEALS HAMPER THE APPETITE OR FOOD INTAKE OF THE CHILD?—Irving J. Wolman. J. Ped. 28:703 (June) 1946.

See "Glances At Nutrition Research" on page 2 for abstract of article. Reprints are available to members of professional and educational groups from the National Dairy Council, Chicago 6.

HIGH SCHOOL STUDENTS STIMULATE COMMUNITY NUTRITION PROJECT

(Continued From Page Three)

the project went directly into the home. The girls in my classes began helping to plan breakfasts which might be served for their families.

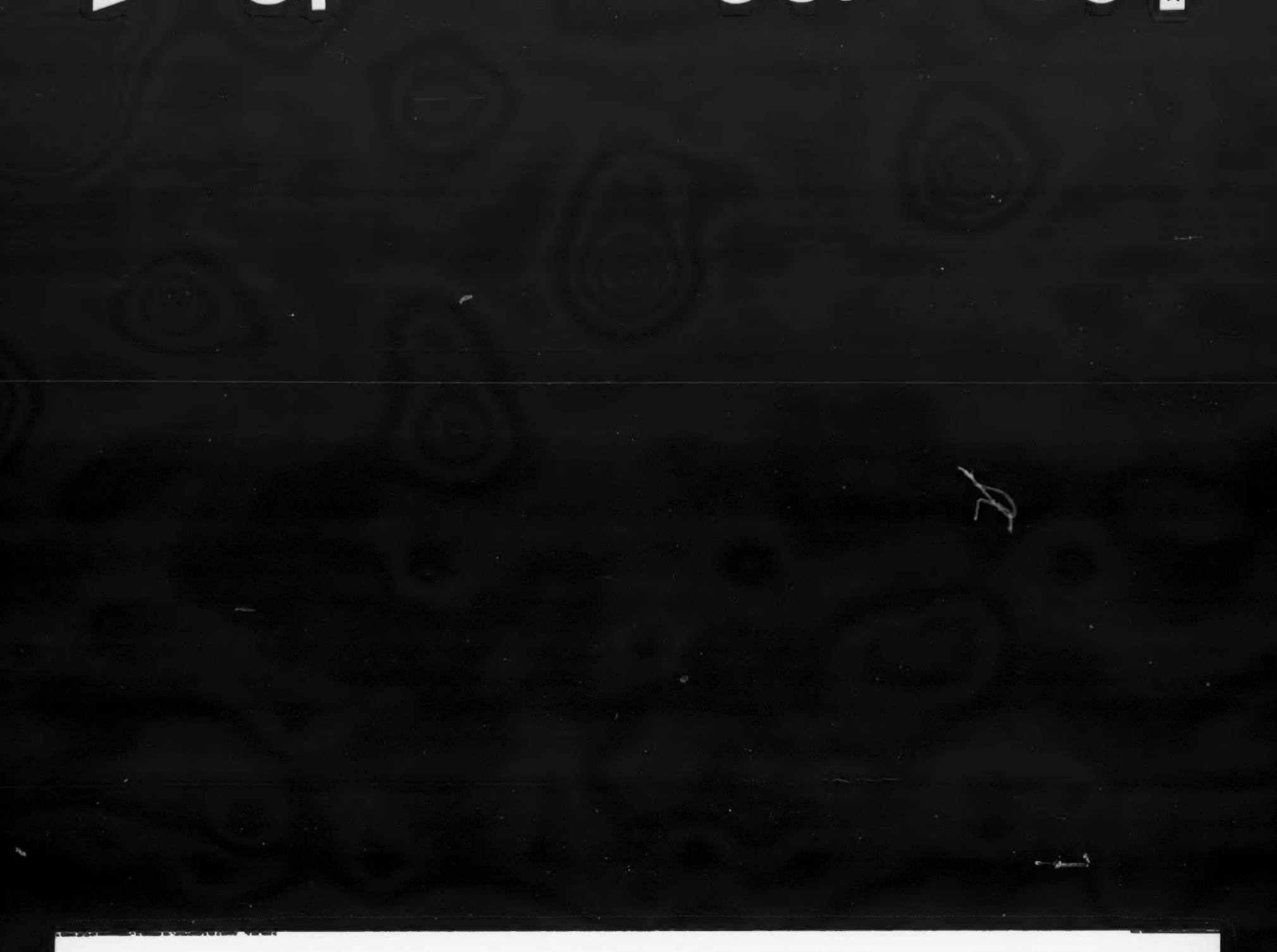
As a phase of the community project we decided to carry our food lessons into the grades. Principals and teachers of the elementary schools were most cooperative when we requested permission to present a lesson in each classroom.

Days were scheduled for our lessons in each school. Our girls planned their talks and demonstrations to fit the age group which they would be instructing. The slogan, "A good breakfast is needed for a good start for a good day," was adopted. In the grades, the children were being prepared for the visit.

And so, at the scheduled time, the student teachers arrived with their posters and illustrative material to tell the children about what good breakfasts mean to the growing girl and boy.

The session was introduced by distributing copies of the National Dairy Council booklet, "Let's Have Breakfast," which the class read. Having gotten the idea, the children were anxious to help plan some good breakfasts. So, using cardboard models of various foods, breakfast combinations selected by the children were set up.

Next the youthful teachers read stories, suited to the age level of the particular children. All of the stories which were used emphasized the importance of nourishing food for youngsters.

By the time the story was finished, lunchtime was approaching and the children were eager to help select, from the food models, the kind of lunch that they would like to have at school or at home. They even decided what foods they would be hungry for when suppertime came, and used them in a menu. Meanwhile, in the intermediate grades students were checking with a chart of the seven basic food groups as a means of testing the adequacy of their meals through the day.

So the day's meals were planned—and wisely planned, too, for we had taken care of that beforehand. The children promised to tell their parents about the food lesson at the dinner table that evening. As for the girls in the nutrition class—the lesson was a valuable and interesting one, for it was theirs.